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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,123	09/28/2004	Shojiro Kaita	1261-0153PUS1	3310
2292	7590	06/16/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			TESKIN, FRED M	
			ART UNIT	PAPER NUMBER
			1713	
DATE MAILED: 06/16/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/509,123

Applicant(s)

KAITA ET AL.

Examiner

Fred M. Teskin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 092804.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

The preliminary amendment of September 28, 2004, has been entered in full.
Claims 1-11 are currently pending and under examination.

The abstract of the disclosure is objected to because it is not limited to a single paragraph. Correction is required. See MPEP § 608.01(b)(C.).

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the following grounds for indefiniteness apply to the indicated claims.

(A) Claim 1 (and claims dependent thereon) is rendered indefinite by the expression "metallocene-type complex ...". The addition of "type" to an otherwise definite expression extends the scope of the expression so as to render it indefinite. In this case, it is unclear how "-type" is intended to affect the ordinary meaning of "metallocene".

(B) Claim 9 is ambiguous in the recitation "polymer which **can be** obtained by ... the polymerization method according to any one of claims 6 to 8". It is unclear (given the non-mandatory "can be" language) whether any limitation(s) implied by the method as recited in claims 6-8 is intended to apply to the polymer product when construing the metes and bounds of claim 9. In addition, one who made or used a polymer made by a method other than that recited in any one of claims 6-8 would have to produce polymers using all possible parameters within the scope of said claims (a practical impossibility)

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and then extensively test each product to determine if his polymer "can be" obtained by a method within the claimed method. A claim is indefinite if undue experimentation is involved to determine the boundaries of protection, *Ex parte Tanksley*, 26 USPQ2d 1389. Amending claim 9 by deleting "can be" would obviate this ground of rejection.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by WO 00/52062 (all references thereto being to the corresponding English language equivalent, US 6595828, cited herewith).

Claim 11 is drawn to a polymer of a conjugated diene, wherein: a cis-1,4-configuration content in microstructure of the polymer is 97.0 mol % or more; and a molecular weight distribution Mw/Mn is 2.00 or less.

WO '062 describes a conjugated diene polymer having a cis-1,4-configuration content of 97 mol % or more and a molecular weight distribution (Mw/Mn) of 2.00 or less (see Examples 1 and 2 in columns 9-10 of US '828, especially, col. 9, lines 65-68 and col. 10, lines 18-20).

As such, WO '062 is deemed to fully meet the limitations of claim 11.

Claims 9-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 00/52062.

WO '062 is applied as in the preceding rejection. In view of the identity of common properties (cis-1,4-configuration and Mw/Mn), the polybutadiene described in at least Examples 1 and 2 of WO '062 appears to be the same as, or patentably indistinguishable from, polymer products embraced by product-by-process claims 9 and 10.

Where, as here, a product-by-process claim is rejected over a prior art product that appears to be identical, although produced by a different process, the burden properly shifts to applicants to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 195 (Fed. Cir. 1983). This is especially true given the lesser substituted cyclopentadienyl group defined burden of proof on the Office in making out a case of

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prima facie obviousness for product-by-process claims, because of their peculiar nature (M.P.E.P. 2113).

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/52062.

WO '062 discloses a catalyst composition for the polymerization of conjugated dienes, the composition comprising (A) a metallocene-type complex of a rare earth metal compound and (B) an ionic compound composed of a non-coordinating anion and a cation and/or aluminoxane (US '828, col. 2, lines 40+).

WO '062 differs from the claimed invention essentially in that a catalyst composition for the polymerization of a conjugated diene comprising a metallocene-type rare earth complex having the specific substituted cyclopentadienyl group defined in claim 1 is not specifically disclosed.

Nevertheless, WO '062 generically teaches, as specific examples of the substituted cyclopentadienyl group, 1-ethyl-2,3,4,5-tetramethylcyclopentadienyl, 1-benzyl-2,3,4,5-tetramethylcyclopentadienyl and 1-phenyl-2,3,4,5-tetramethylcyclopentadienyl, each of which qualifies as the above-noted "substituted cyclopentadienyl group" of claim 1. In this regard, see US '828 at column 4, line 65 to column 5, line 10, where such substituted cyclopentadienyl groups are equated with the pentamethylcyclopentadienyl group preferred therein.

Given the generic teaching of 1-ethyl-2,3,4,5-tetramethylcyclopentadienyl, 1-benzyl-2,3,4,5-tetramethylcyclopentadienyl and 1-phenyl-2,3,4,5-

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tetramethylcyclopentadienyl as alternatively suitable substituted cyclopentadienyl groups for said component (A) of WO '062, there would have been a reasonable expectation of their performing equivalently to pentamethylcyclopentadienyl in the disclosed polymerization method. Such an expectation of equivalence would have led one of ordinary skill in the art to modify WO '062 by utilizing as the catalyst component (A) therein, a metallocene-type complex ligated with any one of the former substituted cyclopentadienyl groups in lieu of pentamethylcyclopentadienyl. Thus the catalyst composition and method of claims 1 and 6, respectively, would have been *prima facie* obvious to one having ordinary skill in the art at the time of invention.

The limitations of claims 2-5, 7 and 8 likewise are disclosed by WO '062 or obvious from the teachings thereof.

In particular, WO '062 teaches the utility of a samarium complex (claim 2) as the metallocene-type complex (see US '828 at column 8, lines 15-20) and that (i) a compound as defined in claim 3 may be used as the ionic compound (*id.*, lines 30-38); (ii) methyl aluminoxane is used as the aluminoxane (claim 4)(*id.*, Example 3); (iii) the catalyst composition may further contain an organic metal compound of elements of Groups I-III (claim 5)(*id.*, column 7, lines 30+); and (iv) the polymerization can take place in the presence of a solvent such as cyclohexane (claims 7-8)(*id.*, column 8, lines 30-41).

Accordingly, the subject matter of claims 1-8 is deemed to have been obvious within the meaning of Section 103(a).

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The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

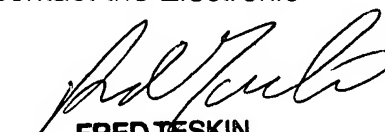
Jenkins is cited as of interest in its disclosure of a block polymer having a block of high *trans* content and a block of high *cis* content, prepared using a compound of a rare earth element, an organomagnesium compound and a Lewis acid to alter the 1,4-isomer content of the polymerization.

No claims are allowed.

Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


FRED TESKIN
PRIMARY EXAMINER
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FMTeskin/06-10-05